

WE CLAIM:

Sub A12  
1. In a simulation system used by an operator and including a source of input data, a display, and a simulator adapted to be executed by a processor and generating a set of simulation results during the execution in response to said input data, an organizing and managing system operatively interconnected between said source of input data and said simulator and said display, comprising:

10 a case manager adapted for storing a plurality of sets and supersets of test data files, said sets and supersets of test data files being stored in said case manager in the form of a tree like structure, one or more of said sets and said supersets of said test data files adapted to be selected by said operator; and

15 editing means responsive to said one or more of said sets and said supersets of said test data files selected by said operator via said case manager and responsive to said input data for editing said test data files and said input data in response to editing actions taken by said operator and generating a set of edited test data files, said simulator generating said set of simulation results during the execution of said simulator in response to said set of edited test data files.

20  
2. The organizing and managing system of claim 1, wherein said editing means comprises:

25 a case builder adapted for receiving a first set of keywords associated with said input data and a second set of keywords associated with said one or more of said sets and said supersets of said test data files selected by said operator via said case manager for editing said first set of keywords and said

second set of keywords in response to editing actions taken by said operator thereby generating a third set of keywords; and

a simulation file adapted for storing said third set of keywords.

5

3. The organizing and managing system of claim 2, wherein said editing means further comprises:

10 a run manager adapted for receiving said third set of keywords from said simulation file and submitting said third set of keywords to said simulator, said simulator using said third set of keywords from said simulation file during its execution by the processor and, responsive thereto, generating said set of simulation results.

15  
20  
25  
30  
35  
40  
45  
50  
55  
60  
65  
70  
75  
80  
85  
90  
95  
100  
105  
110  
115  
120  
125  
130  
135  
140  
145  
150  
155  
160  
165  
170  
175  
180  
185  
190  
195  
200  
205  
210  
215  
220  
225  
230  
235  
240  
245  
250  
255  
260  
265  
270  
275  
280  
285  
290  
295  
300  
305  
310  
315  
320  
325  
330  
335  
340  
345  
350  
355  
360  
365  
370  
375  
380  
385  
390  
395  
400  
405  
410  
415  
420  
425  
430  
435  
440  
445  
450  
455  
460  
465  
470  
475  
480  
485  
490  
495  
500  
505  
510  
515  
520  
525  
530  
535  
540  
545  
550  
555  
560  
565  
570  
575  
580  
585  
590  
595  
600  
605  
610  
615  
620  
625  
630  
635  
640  
645  
650  
655  
660  
665  
670  
675  
680  
685  
690  
695  
700  
705  
710  
715  
720  
725  
730  
735  
740  
745  
750  
755  
760  
765  
770  
775  
780  
785  
790  
795  
800  
805  
810  
815  
820  
825  
830  
835  
840  
845  
850  
855  
860  
865  
870  
875  
880  
885  
890  
895  
900  
905  
910  
915  
920  
925  
930  
935  
940  
945  
950  
955  
960  
965  
970  
975  
980  
985  
990  
995

15 4. The organizing and managing system of claim 3, wherein said display includes a results viewer, said results viewer adapted to display said set of simulation results generated from said simulator.

20 5. The organizing and managing system of claim 4, wherein said display includes a report generator, said report generator adapted to generate a report describing said set of simulation results generated from said simulator.

25 6. The organizing and managing system of claim 3, wherein said run manager includes monitoring means for monitoring said third set of keywords received from said simulation file.

30 7. The organizing and managing system of claim 6, further comprising a results file adapted to be operatively connected to said simulator for receiving said set of simulation results from said simulator and storing said set of simulation results therein, said run manager receiving said third set of keywords from said simulation file and said set of simulation results from said

results file thereby allowing said third set of keywords to be compared by an operator with said set of simulation results.

8. The organizing and managing system of claim 7, wherein said display  
5 includes a results viewer connected to said results file, said results viewer adapted to display said set of simulation results received from said results file.

9. The organizing and managing system of claim 8, wherein said display  
includes a report generator connected to said results file, said report generator  
10 adapted to generate a report describing said set of simulation results received from said results file.

10. In a simulation system used by an operator, a method for generating a  
set of simulation results in response to a set of input data and displaying said  
15 set of simulation results, comprising the steps of:

storing said input data in a case manager storage medium in the form of  
a tree like structure, said input data including a plurality of sets of data and a  
plurality of supersets of said data, said sets of said data and said supersets of  
20 said data being stored in said case manager storage medium in the form of said tree like structure, said sets of said data and said supersets of said data adapted to be selected by said operator;

generating said sets of said data from said case manager storage  
25 medium when said sets of data are selected by said operator;

submitting said sets of data to a simulator in response to the generating  
step, said simulator executing and generating said set of simulation results in  
response to said sets of data; and

30 displaying said set of simulation results.

11. The method of claim 10, wherein the submitting step comprises the steps of:

5 editing a first set of keywords representing said sets of data and  
generating a second set of keywords representing edited versions of said sets of  
data; and

10 submitting said second set of keywords to said simulator in response to  
the editing step, said simulator executing and generating said set of simulation  
results in response to said second set of keywords.

12. The method of claim 11, wherein the displaying step comprises the steps  
of:

15 storing said set of simulation results, which are generated from said  
simulator, in a results file; and

20 displaying said set of simulation results which are stored in said  
results file.

25 13. The method of claim 12, wherein the step of storing said set of  
simulation results in a results file comprises the steps of:

comparing said second set of keywords submitted to said simulator with  
said set of simulation results stored in said results file; and

30 storing said set of simulation results, which are generated from said  
simulator, in a results file.

14. The method of claim 13, wherein the step of displaying said set of simulation results which are stored in said results file comprises the steps of:

displaying said set of simulation results via a results viewer and generating a report documenting said set of simulation results via a report generator.

15. A simulation system responsive to a plurality of sets of input data for simulating an earth formation located in the vicinity of an oilfield reservoir, generating a set of simulation results in response to the simulation, and displaying the set of simulation results, comprising:

case manager means for organizing and managing the plurality of sets of input data being used by the simulation system, said case manager means including a plurality of case scenarios organized in a tree-like structure, some of said case scenarios being supersets of other of said case scenarios in the tree-like structure, an operator selecting one or more of the case scenarios in the case manager;

case builder means for receiving said one or more of the case scenarios selected by the operator, editing or changing a set of data disposed within the selected case scenarios in response to editing actions taken by the operator, and, responsive thereto, generating a set of edited case scenarios;

run manager means responding to the set of edited case scenarios from the case builder means for submitting the edited case scenarios to a simulator, the simulator responding to the edited case scenarios from the run manager means by executing and thereby generating the set of simulation results, the set of simulation results from the simulator being stored in a results file;

results viewer means for displaying the set of simulation results generated by the simulator, the results viewer displaying the set of simulation

results and any instantaneous changes being made to the set of simulation results at any point in time; and

report generator means for generating one or more reports which record the set of simulation results.

16. A device, comprising:

means for storing instructions which are executable by a processor of a computer, said instructions adapted for use by a simulation system for generating a set of simulation results in response to a selected set of data and displaying the set of simulation results, said instructions when executed by said processor of said computer conducting a process comprising the steps of:

presenting for display a tree like structure representing a plurality of sets of data and a plurality of supersets of said data which are stored therein in the form of said tree like structure, said plurality of sets of data and said plurality of supersets of data adapted to be selected by an operator via said tree like structure on said display;

presenting for display an editing means when said plurality of sets of data or said plurality of superset of data are selected by said operator via said tree like structure on said display, said data adapted to be edited by said operator via editing means on said display thereby generating edited data; and

submitting said edited data to a simulator when said data is edited by said operator via said editing means on said display.

17. The device of claim 16, further comprising:

